Strategic Plan for

Bureau of Highway Operations Special Highway Operations Program (SHOP)

Wisconsin Department of Transportation

DTID / BHO

May, 2001

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Acronyms and Abbreviations

BHC	Bureau of Highway Construction
BHD	Bureau of Highway Development
BHO	Bureau of Highway Operations
BHR	Bureau of Railroads and Harbors
BSHP	Bureau of State Highway Programs
BOE	Bureau of the Environment
CDR	Concept Definition Report
CG	Core Group
DSR	Design Study Report
FDM	Facilities Development Manual
FHWA	Federal Highway Administration
FY	Fiscal Year
IMG	Investment Management Group
LD	Lead District
O&M	Operations & Maintenance
OPA	Office of Public Affairs
OPM	Operational Planning Meeting
PDM	Project Development Manager
pER	programmatic Environmental Report
PLP	Projects Letting Plan
PPP	Proposal Preparation Process
PPRPM	Permanent Plowable Raised Pavement Marker
PS	Project Sponsor
PS&E	Plans, Specifications, & Estimates
SCC	Statewide Coordination Consultant
SDD	Standard Detail Drawings
SHOP	Special Highway Operations Program
SPO	Systems Planning Operations
STSP	Standard Special Provisions
SWEF	Safety Weight Enforcement Facilities
TGM	Traffic Guidelines Manual
TSC	Transportation Safety Commission
WDNR	Wisconsin Department of Natural Resources
WisDOT	Wisconsin Department of Transportation

Core Group Members

Table 1 identifies the people who served on the Core Group to guide the development of this document:

TABLE 1
Core Group Members

Name	Organization
Ron Becker	District 4
Bill Bremer	FHWA
Brian Brock	District 3
Jim Craft	District 2
Bruce Fredrickson	District 4
Michael Goetzman	OPA
Russell Habeck	District 7
David Huntley	District 1
John Kinar	BHO
Thomas Lorfeld	BHO
Greg Mattson	District 8
Dale Oestreich	District 5
Matt Rausch	BHO
Pete Rusch	BHO
Ashwani Sharma	BHO
Jack Watzka	District 3

CH2M HILL prepared the document under contract to the Bureau of Highway Operations (BHO).

Jeff and Linda Russell of Russell Consulting, Inc., as subconsultants to CH2M HILL, provided valuable assistance in the form of facilitating the meetings of the Core Group.

Purpose

The Wisconsin Department of Transportation (WisDOT) initiated the Special Highway Operations Program (SHOP) in 1998, based upon funding opportunities created by TEA 21, the Transportation Efficiency Act. The BHO was allocated resources of $5 million annually to make statewide and corridor-wide safety and operations improvements. The BHO worked with the districts to develop an original list of 21 proposals for improvement items to be funded by SHOP. Table 2 lists the eight projects that were selected for initial implementation.

TABLE 2
SHOP Projects to Date

Description	Construction Year(s)
Permanent Plowable Raised Pavement Markers (PPRPMs) on all 65 mph highways	1999
Dotted edge line extensions through all interchange off-ramps	1999
Advance crossroad name signs on expressways	2000-01
Advance crossroad name signs on two lane highways on the NHS	2000-01
Shoulder rumble strips on freeways	1999
Shoulder rumble strips on expressways	1999
Highway lighting at intersections on 65 mph expressways	2002
Highway lighting at Department traffic signal locations	2002

The BHO and its engineering consultants have worked since 1998 with the districts to gather data and to design and prepare the Plans, Specifications, and Estimates (PS&E) documents for those original items.

SHOP projects differ from traditional Department projects in several ways. The two most significant differences involve project ownership (BHO vs. district) and project limits (corridor-long or statewide approach vs. traditional projects being developed for specific lengths of highway). As a result, there have been numerous coordination issues, questions, and concerns about what the program is meant to accomplish and how it should do so.

This Strategic Plan is intended to address these issues and concerns. Specifically, it is meant to define and document the following:

- Processes, methods, and procedures (data gathering, assignment of ID numbers, PS&E review, how SHOP projects interact with ongoing district projects, etc.) for implementing future SHOP projects
- Communications protocol between the BHO and the districts

- Responsibilities of the BHO and the districts
- PS&E development
- SHOP Standards and how these are integrated into the Facilities Development Manual (FDM) and other guidance documents

The Strategic Plan also includes a listing of prospective SHOP improvement items.

SHOP Charter

The SHOP Charter comprises the Vision Statement, the Mission Statement, and the Partnering Agreement for SHOP. These documents were developed by the Core Group at meetings held during the development of the Plan. The Core Group members considered several questions in their attempt to define SHOP. Two of the key questions and a compilation of the answers and/or issues that were generated during these meetings are listed below.

What are the components of SHOP's Vision?

The answers to this question fell into two primary categories:

External

- Develop uniform roadways across the state with respect to such items as classification, pavement markings, signing, etc.
- Decrease crashes and fatalities. Program emphasis is suggested to be placed upon two-lane roads, where most of these occur.
- Focus on drivers: driver education and behavior. This includes addressing the needs of an aging population, and general improvement of the driving experience.
- The traveling public feels that dollars are well spent – SHOP must be cost-effective.
- Take advantage of the opportunities afforded by SHOP for addressing safety enhancements and/or the ongoing statewide or system-wide improvements that would otherwise be lost.

Internal

1. SHOP should strive to be a self-managed program and to minimize scarce District/Central Office human resources. It should be a collaborative effort within various DOT groups, and it should present opportunities for partnership within the organization.
2. Support DOT's Safety Strategic Plan and Improvement Program.

What are the consequences if SHOP does not achieve its Vision?

- Lost opportunities.
- Uniformity and consistency lost or sacrificed.
- Districts may need to re-prioritize some improvement projects.
- Continue to be reactive rather than proactive.
- Public suffers – not getting what they need – no decrease in crashes and fatalities.

Vision Statement

The SHOP Vision Statement provides an understanding of what SHOP will accomplish and what will be different when it is done. The Vision Statement for SHOP is:

Special Highway Operations Program's (SHOP) vision for the future is to…

Design and implement uniform, system-wide improvements that result in enhanced highway safety and operations throughout Wisconsin.

Mission Statement

The mission statement provides a point of reference for making sure the program is *accomplishing the right things*, as compared to simply *doing things right*.

SHOP's mission is to…

Proactively design, construct, and maintain highway safety and operational improvements that are uniform, cost-effective, timely, and user-friendly.

- Uniformity and cost-effectiveness are achieved by planning and implementing improvements system-wide, collaborating on resources, and achieving an economy of scale in construction.
- Timeliness is achieved by all transportation districts (working in concert with central administration) uniformly making improvements within an established timeline to achieve agreed-upon outcomes.
- User-friendliness is achieved by providing uniformity throughout the highway system, and by constructing, operating, and maintaining features that improve the driving experience.
- Integrate efforts with WisDOT's strategic emphasis where appropriate.
- Public education / notification on the purpose and need for each individual SHOP project is done on a timely basis prior to project implementation.

Partnering Agreement

WisDOT is a diverse organization. It has organizational vision and mission statements which guide it, yet there are variations in how its various bureaus, divisions, and districts may function on a day-to-day basis. There are also individual differences within the organization as to the "whats," the "whys," and the "hows" regarding the accomplishment of the business at hand. The Core Group recognized these internal variations and differences, and decided to use the concept of Partnering to work through these differences as they relate to SHOP.

The Partnering concept is intended to bring various facets of the organization together through strategic and informed cooperation to achieve the different, but complimentary, goals of each. Specifically, Partnering includes the following:

- A commitment to creative cooperation instead of confrontation
- A focus upon common goals and benefits
- Team building
- Conceptualizing “Us” rather than “We versus Them”
- A method for identifying and solving issues before they become problems
- Establishing a “Win-Win” environment
- A cooperative management team with key players from all of the organization’s elements involved in the program

The Core Group members developed- and shared with appropriate district management staff- the Special Highway Operations Partnering Agreement. A copy of the signed Agreement is included in Appendix A. In order for SHOP to function effectively as it moves ahead, it is the desire of the Core Group that the spirit of the Partnering Agreement be embraced by all who are involved in SHOP.

Critical Success Factors

One of the key uses of this Strategic Plan should be to provide a compass for SHOP. In order to judge the overall success of the program, a system for measuring the program's progress is necessary. Critical Success Factors, or metrics, have been developed to accomplish this measurement through the use of the Vision and Mission Statements, and the Partnering Agreement. Further, the metrics consider several viewpoints such as the opinion of highway users, district staff, Department management, and BHO staff.

The following list identifies the metrics that will be used for SHOP:

- As a part of the normal WisDOT Project Delivery Process, the key items of meeting the schedule and budget also apply to SHOP improvement items.
- Highway users notice improvements in the perceived safety of the highway environment as a result of SHOP improvements.
- District planning, operations, and maintenance staff state-wide acknowledge that they have had input into SHOP.
- The SHOP ACCESS database is updated promptly upon the completion of a construction element, and copies are provided to each district within 1 month of the update.
- Independent research shows a decrease in crashes as a result of SHOP improvements.

It is expected that some or all of these metrics will be applied to each SHOP improvement project, as appropriate, upon conclusion of construction. There may be additional metrics established for particular projects.

Project Development Process

The Core Group was asked the following question in order to determine the parameters that would be used to develop the SHOP Project Development Process:

What Processes, Systems, Structures, and Strategies need to be in place to ensure SHOP's long-term success?

The issues identified by the Core Group form the basis for the remainder of the Strategic Plan, and they are summarized as follows. Items 1 through 5 were deemed to be the most important.

1. Sufficient resources must be available – both people and dollars.
2. The structure of the Plan must be clear, it must have specific goals, and it must be rational in order to get the buy-in of key internal stakeholders, the public, counties, vendors / suppliers, etc.
3. Agreement must be reached on Operation and Maintenance (O&M) issues. There must be a plan to address how O&M costs will be handled on SHOP projects.
4. The different roles of the Central Office and the districts need to be defined. BHO needs to play a leadership role.
5. A steering committee is needed for setting priorities. Systems Planning Operations (SPO) managers play a role, and their accountability needs to be established. The authority of the Core Group also needs to be defined.
6. Program management systems must be in place for measurement, construction management, and maintenance. Customer surveys are one such program management tool.
7. Communication protocols must be clear throughout the SHOP project implementation process. This includes both internal communications and communications involving the public, the legislature, suppliers / manufacturers, counties, etc.
8. Coordination and communication with freeway operations and projects groups is a must.
9. The Plan must be integrated with ongoing district plan preparation processes.
10. There must be cooperation both within and among districts.
11. Create strong external partnerships. Examples: Transportation Safety Commission (TSC), industry, and local law enforcement.
12. The Plan and method for prioritizing prospective improvements must be flexible, and it must able to be changed as successes and failures develop.
13. Implement what works and what is proven.

From these comments, it is apparent that there are two key Processes, Systems, Structures, and Strategies that are a continuing theme. These issues must therefore be considered to be the most important issues to be addressed to achieve long-term SHOP success. They are:

1. Resource availability and ensuring that the Resource Model accurately reflects SHOP; and
2. Communication and coordination between various Department bureaus, offices, agencies, and geographies.

The latter may be expanded to include counties.

Overview

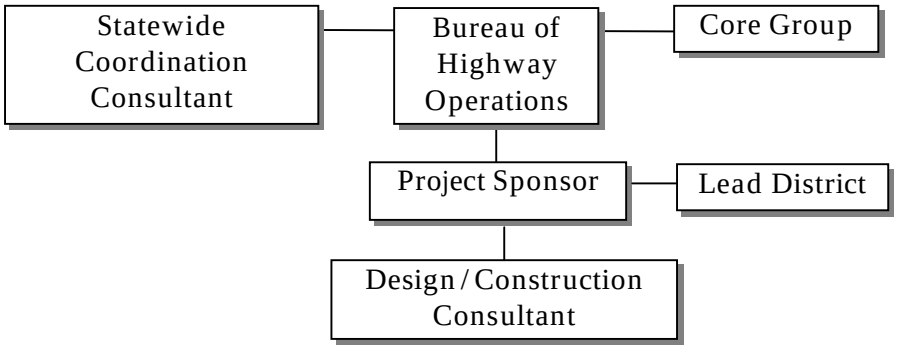
The process for the development of a SHOP Improvement Project generally follows the WisDOT Facilities Development Process. The Facilities Development Process, as described in Procedure 3-1-1 of the FDM, consists of five administrative stages. They are:

1. Concept Definition
2. Investigation
3. Determination
4. Final Design
5. Pre-Contract Administration

The SHOP Project Facilities Determination Process is shown in flowchart format in Figure 1. Figure 2 depicts the Typical SHOP Project Implementation Schedule. The process follows the five FDM administrative stages, and it includes two additional stages: Construction and Post-Construction. Each activity box is numbered and includes the name of the responsible party and key communication links. References are provided to the FDM when applicable, and additional explanatory notes are included on the flowchart pages. In addition, clarifications and more specific discussion of activity blocks are provided in the next section.

Roles and Responsibilities

The general “organization chart” for a SHOP project is:



A central intent of this Plan is to minimize district manpower time requirements within the SHOP Facilities Development Process. Consultant assistance is an important part of the model that has been developed to achieve this. District input is included only at those points in the process in which their participation is deemed critical.

Bureau of Highway Operations (BHO)

The BHO has been designated as the responsible Bureau within the Department for SHOP implementation. Within the BHO, the State Traffic Engineer is responsible for SHOP. This is currently Peter Rusch, P.E. The State Traffic Engineer and/or his designees have final review and approval authority over all SHOP issues.

All consultant budgets expended to support SHOP are provided by BHO. District consultant budgets are not involved.

Core Group (CG)

The Core Group is a group of interested individuals from the Department and the Federal Highway Administration (FHWA) who have agreed to serve in an advisory capacity for the ongoing implementation of SHOP. Their initial charge was to come together in a partnering format to develop the Vision and the Mission Statements for the program, and to review, provide input, and approve this Strategic Plan. In addition to their duties, they have also developed the SHOP Improvement Item Priority List, and they will select and recommend improvement items from that list for implementation. The current makeup of the Core Group is included in Page 1 of this document.

Statewide Coordination Consultant (SCC)

The BHO has retained a consultant to assist with the overall coordination and implementation of SHOP. Currently, the firm of CH2M HILL serves in this capacity. In this role, the consultant handles whatever tasks relative to overall program coordination that the BHO requests of it. Some examples include the preparation of this Strategic Plan, the coordination of various SHOP logistics issues with the districts, providing guidance to other consultants doing SHOP PS&E work, and performing Post-Construction Stage activities.

Project Sponsor (PS)

The Project Sponsor is a WisDOT employee from the BHO who has the responsibility of general oversight and/or management of any particular SHOP project.

Lead District (LD)

The Lead District assists the project sponsor. The Lead District concept first emerged during the development of the SHOP Phase 2 PS&E work. It was necessary to have one district, from within the multiple districts that were geographically a part of a given SHOP PS&E, to serve as the point position for handling those functions that any district would typically take care of in a traditional Department, district-owned project. This concept will continue in future projects. Specific identification of Lead District staff will be coordinated through the Resource Model.

Design/Construction Consultant

To minimize the impact of SHOP activities on Department staff, the BHO, acting through the Project Sponsor, will contract with consulting engineering firms to provide data gathering, PS&E, and construction phase services.

Detailed Flowchart Discussion

Activities 1 to 5 – Initiate New SHOP Improvement Item(s) from Priority List

Activity 1

In late August of each year, the SCC will solicit the BHO and the districts, by way of the Core Group members, for three items:

1. Additional projects to be added to the SHOP Prospective Project List.
2. Evaluation and feedback comments on the current year SHOP project(s). Desired project feedback will include any aspect of the SHOP Facilities Development Process that can be used to review and improve the delivery of SHOP improvement projects.
3. Comments or suggestions for changes to the SHOP Project Selection Criteria.

The solicitation will include a copy of the most recent Prospective Project List and the Selection Criteria.

Activity 2

The SCC will prepare an initial order-of-magnitude construction and O&M cost estimate for any new prospective SHOP projects received from the solicitation.

Activity 3

The SCC will summarize the information gathered in Activity 1 and the costs estimated in Activity 2 and submit them to the Core Group by 01 October. The annual SHOP Project Review Meeting will also be scheduled at that time.

Activity 4

The Core Group will meet once each year, normally for 4 hours in mid-October, to select and recommend items for implementation. The intent will be to select items that will be constructed in the second fiscal year (FY) after the meeting. **Example:** The Core Group meeting in October 2001 (FY 02) will select items for construction to start in the spring of 2004 (FY 04). The specific schedule for implementation will depend upon several variables, including data gathering needs, the PS&E schedule, and the PS&E lets.

Activity 5

The SCC will submit the items selected by the Core Group for the next implementation cycle to the BHO for review and approval. The BHO will review and approve or disapprove of the proposed items. Assuming approval of the item(s), the Project Sponsor will also be named.

Activities 6 and 7 – CDR

The SCC prepares a CDR for each project, which is distributed to the BHO and to the appointed SHOP representative for each district that will be impacted by the SHOP improvement item for review and comment. If any revisions are necessary, they will be

made by the SCC. Final approval of the CDR is by the BHO. They will provide a courtesy copy to Design Services.

Activity 8 – Project Authorization

Project Design and Construction I.D. numbers are established jointly by the BHO, the PS, and the Bureau of State Highway Programs (BSHP). The PLP (Projects Letting Plan) group will be consulted for input on the letting date, and a tentative let date will be jointly determined by the PLP group and the PS. BHO will provide concept-level project cost information to the IMG.

Activity 9 – Consultant Solicitation and Selection

This activity is in accordance with FDM Chapter 8. BHO will take the lead, as the consultants chosen will be under contract to it, but input shall be solicited from the districts.

Activity 10 – OPM

An Operational Planning Meeting (OPM) will be held for SHOP improvement projects, but, due to the multi-district or statewide nature of these projects, the OPM does not need to include local governments and utilities. The design consultant will be responsible for making all arrangements for this meeting. Additional attendees will be the BHO, the PS, the districts impacted by the project, and a representative from the Office of Public Affairs (OPA).

A Public Involvement Plan is normally developed at about the same time that the OPM is held for a typical district-owned project. This is not included in the SHOP flowchart. The OPA will begin to pass information to the appropriate district communications staff.

Activities 11 to 14 – Data Gathering and Database Development

Data gathering for SHOP projects will differ from the typical Department project in several respects. For example, the typical project requires traffic data and corridor-specific base mapping. For the most part, SHOP projects do not require these data sets. In addition, SHOP projects require a thorough review of available State Highway Logs, a review of similar written data, and an intensive field review of the corridors to be included in the project. The selected design consultant will perform those tasks and assemble the data into an ACCESS database. At this point, the districts that will be impacted by the project will be asked to review and comment on the data for accuracy.

Activities 15 and 16 – Setup of PS&E packages and Determination of Lead District(s)

One of the initial uses of the data will be to determine the geographic organization of the PS&E documents. The PS and the design consultant will provide the recommendations for which districts should serve as the Lead District for the project as well as the recommendations for the geographic organization of the PS&E documents. The districts will be given the opportunity to review and comment on this. Once the Lead District(s) are agreed upon, one point of contact for each project within each Lead District is to be established and subsequently provided to the PS.

Activities 17 and 18 – Environmental Clearance and DSR

A SHOP project does not require an evaluation of alternatives or any individual project environmental documents. Because the work is all being accomplished within existing right-of-way as improvements to existing highways, most projects will meet the requirements for a Categorical Exclusion, and they will be noted in the Design Study Report (DSR) as meeting this condition. The design consultant will be responsible for reviewing each project to verify this before noting it in the DSR.

SHOP projects which do not qualify as a Categorical Exclusion are expected to meet the requirements for a programmatic Environmental Report (pER). The design consultant will be responsible for completing the pER Checklist for these projects, as outlined in FDM Procedure 21-15-15, and for including the completed Checklist as part of the DSR.

Most of the Determination Stage activities associated with a typical project are not required as a result of the Categorical Exclusion. An abbreviated DSR, however, will be required for each SHOP project. The design consultant will prepare the short form DSR and submit it to the PS. The BHO has approval authority for this, but an information copy will also be provided to the Lead District. It is expected that the Project Development Manager (PDM) within the Lead District will review and comment on the document.

An information copy of the approved short-form DSR will be provided to Design Services.

Activities 19 to 25 – Final Design/PS&E

Typical SHOP improvement projects will generally not require all of the Final Design stage activities that are identified in the FDM. Examples of unnecessary activities include: real estate related issues, noise analyses, Wisconsin Department of Natural Resources (WDNR) air quality permits, railroad coordination, 401/404 permit associated work, structure plans, utility adjustments, and local government approval of plans. If any of these activities are determined to be required for a particular SHOP improvement item, they will be accomplished in accordance with FDM procedures.

Submittals and meetings are required at the 60% and 90% levels of completeness. SHOP improvement projects have great variances in the level of effort and content for these submittals. Scoping for the design services contract should include the requirements at the 60% and 90% levels.

The design consultant will make all design submittals to the Lead Districts (with copies to the PS). The design consultant will be responsible for making sure that the appropriate various central office bureaus of the Department, such as Highway Development (BHD), Highway Operations (BHO), Environment (BOE), and Railroads and Harbors (BHR), receive copies so that they can complete their respective Quality Control Checklists. Normally those bureaus will do so at the 90% PS&E submittal.

The PS should provide a copy of the 60% and 90% Design documents to Design Services. They are expected to have minimal involvement in the project, but they should have the opportunity to comment on such things as non-operational issues.

Activities 26 and 27 – Update PS&E Information into FOS and Forward PS&E to BHC for PPP

Shortly after submittal of the Final PS&E a final Let Date will be established by the Lead District, BHO, and IMG. In addition, the project budget information will be updated in the FOS. The Lead District will then forward the PS&E to the Bureau of Highway Construction (BHC) for the Proposal Preparation Process (PPP). The PPP, including the Bidability Review of the PS&E, will be accomplished in accordance with FDM 3-20-44.

Activity 28 – Revise PS&E Documents

The design consultant resolves comments made by the BHC during the Proposal Preparation Process, and returns any changes to the PS&E directly to the BHC.

Activity 29 – Precontract Administration

The BHC prepares a Highway Work Proposal and Plans for every project. Advertisements are prepared for Western Builder and the Daily Reporter as described in FDM Chapter 3. The Letting and Construction Contract Award is handled by the BHC.

Activity 30 – Preconstruction Meeting

After both the construction and construction engineering contracts are signed, the preconstruction meeting is set up, arranged, and lead by the construction consultant. The design consultant, the PS, the representatives from the districts involved in the plan (including the Lead District), and the Contractor are invited.

Activities 31 to 35 – Construction

The construction consultant will be the construction engineer, handling those parts of the work included in their contract work scope. The Lead District will be responsible for oversight and certain specific activities as defined in the consultant's work scope.

Activities 36 to 40 – Post-Construction

One of the objectives of the BHO is to learn from the experiences of each SHOP improvement item that goes to construction. They should provide the recommendations for appropriate changes to the various Department manuals in a timely manner. The Post-Construction Stage activities are the mechanism for accomplishing this.

Activity 36 – Provide Feedback

The specific groups providing feedback will vary depending on the nature of the project. Feedback is to be transmitted to the BHO through the districts. Various standing technical committees that exist within the different bureaus of WisDOT provide a mechanism for change and feedback. The BHO will become the sponsor of the requested changes related to SHOP, and they will provide continuity for changes in manual updates, specifications, construction details, and standard detail drawings.

Activity 37 – Review Feedback and Prepare Draft Revisions

The SCC will review the feedback and prepare draft revisions of the appropriate documents. These are submitted to the PS for distribution within the Department.

Activities 38 to 39 – Review and Comment on Draft Revisions and Prepare 2nd Draft

Specific WisDOT Bureaus are responsible for specific documents.

The BHD is responsible for updates to the FDM procedures and Standard Detail Drawings (SDD). Methods for updating the FDM are found in Procedure 1-1-1. Specification changes are handled by the BHC. Traffic issues are addressed in the Traffic Guidelines Manual (TGM). The BHO is responsible for updating the TGM.

The SCC will revise the draft revisions based on input from the Bureaus. Changes to SDDs are handled by WisDOT CADDS unit. FHWA must approve any new or revised SDDs before publication.

Activity 40 – Incorporate Revisions into Department Policy

The revisions are incorporated into WisDOT policy through publication in the Standard, Supplemental, Standard Special Provisions (STSPs), FDM, or TGM. This is handled internally according to established timelines and procedures.

Prospective Project Listing

The Project Selection Matrix listed on the following pages shows the initial listing and ranking of prospective SHOP projects as developed by the Core Group during the preparation of the Strategic Plan. The matrix includes the selection criteria for evaluating and rating each project. (It should be noted that the Core Group decided to have BHO review and rank the category E projects.) Several projects were then identified as candidates for immediate implementation, e.g., to move forward with data gathering, PS&E efforts, and construction in years 2002 and 2003. They are shown as outlined, bold text in the column titled "Total Desired."

The Core Group will meet in October, 2001 for the first meeting of the annual SHOP cycle. At that time they will review this listing and select projects for construction in the year 2004.

Once projects are approved for implementation, they will be identified as "In Progress." Additional prospective projects will be added to the list annually, as well as any other times the Core Group members suggest them.

Project Selection Matrix

Category S - Signing

Selection Criteria — Required

1. Not experimental
2. Conforms to WisDOT Policies
3. System wide approach
4. Addresses customer or other identified need
5. Long-term O&M issues can be addressed
6. Meets FHWA eligibility requirements

Required- Must be Answered "Yes"

Selection Criteria — Desired

1. Appropriate for SHOP funding
2. Preserves/enhances highway safety
3. Consistent w/WisDOT Safety Strategic Plan
4. High public visibility and impact
5. Builds on successful projects in other states

Rank each from 1 (low) to 5 (high)

Project	Description	1	2	3	4	5	6	1	2	3	4	5	Total Desired	RANK
S-1	Improved reflective surfaces on signs...particularly to fix the problem when frost renders signs hard to read.												0	
S-2	**Type 1 (Big Green) sign replacement program.**							3	3	2	4	0	12	
S-3	Expansion of advance crossroad sign program to all state trunks.												0	
S-4	Larger & brighter (more reflective) speed limit and advance warning signs (curves, Ts, Ys, crossroads, merge, lane ends, narrow bridges, steep grade, bumps, dips, no passing) and, most importantly , larger STOP signs UNOBSTRUCTED BY parked cars, bushes, tree branches. Many $ should go into increasing the vision of STOP signs, both in urban and rural areas. Daylighting for R/R crossbucks is or should be a priority also.												0	
S-5	Advanced active hazard identification notice for situations like S-curves, bridge height, curves on mainline and ramps, RR crossings on expressways, etc. on a statewide basis.												0	
S-6	**Alternate route signs.**							4	3.5	3.5	4	*	15	
S-7	Enhanced reference markers.												0	
S-8	Sign bridges for lane designation signing.												0	
S-9	**Uniform regulatory signs at traffic signals.**							4.5	4.5	5	4	0	**18**	
S-10	**Systematic replacement of sign bridges.**							4	3	2	1	0	10	
S-11	**Systematic sign replacement.(reflectivity standards)**							1.5	4	3	4	0	12.5	
S-12	Older driver improvements: increased letter size.												0	
S-13	More word messages to supplement signing and marking.												0	
S-14	**Mile markers on freeways and expressways**							4	5	3	4	0	**16**	
S-AC	Advance crossroad name signs on expressways (2000-2001 Construction).													
S-AC	Advance crossroad name signs on two lane highways on the NHS (2000-2001 Construction).													

Note: **BOLD items were determined by Core Group to meet all required selection criteria.**

SHADED items failed one or more required selection criteria.

OTHER items require more clarification.

AC Denotes active projects either currently in development or those for which construction has been completed.

Project Selection Matrix

Category M - Marking and Delineation

Selection Criteria — Required

1. Not experimental
2. Conforms to WisDOT Policies
3. System wide approach
4. Addresses customer or other identified need
5. Long-term O&M issues can be addressed
6. Meets FHWA eligibility requirements

Required- Must be Answered "Yes"

Selection Criteria — Desired

1. Appropriate for SHOP funding
2. Preserves/enhances highway safety
3. Consistent w/WisDOT Safety Strategic Plan
4. High public visibility and impact
5. Builds on successful projects in other states

Rank each from 1 (low) to 5 (high)

Project	Description	1	2	3	4	5	6	1	2	3	4	5	Total Desired	RANK
M-1	**Improved delineators along our shoulders. The metal posts continually get bent and or knocked down.**							1	4	5	4	0	14	
M-2	**We've done raised pavement markers along CL. What about outside pavement edge?**							4	4	5	5	0	18	
M-3	**Higher quality pavement markings in areas where existing markings do not hold up well due to traffic volumes..or simply aren't very visible.**							4	5	5	5	0	19	
M-4	Pavement Marking: Tape Rumble Strips; 3D paint for stop bars and/or cross walks.												0	
M-5	**Expand use of Raised Pavement Markers.**							4	4	5	5	0	**18**	
M-6	**We have had the comment from the county people that the bridge deck markings do well and they asked if we could use these for more uses.**							2	3	2	3	0	10	
M-7	White reflectors that surround intersections on 2-lane highways. (Michigan uses this in the Upper Peninsula.)												0	
M-8	**The use of high reflectivity tape/strips (similar to that used on RR cross buck supports) on the supports of stop signs and other signs at high crash locations.**							3	3	4	3	0	13	
M-9	**RR Crossing markings. Catch things that have fallen through the cracks.**							3	4	4	4	0	15	
M-10	**Improve guardrail delineation.**							3	3	3	3	0	12	
M-11	**Turning path markings at intersections.**							5	3	4	5	0	**17**	
M-12	**Wider pavement markings.**							2	3	4	4	0	13	
M-13	Dotted edge lines through intersections.												0	
M-14	**Epoxy pavement marking.**							2	3	4	2	0	11	
M-15	Dotted lines through interchange ramps.												0	
M-16	**Delineation on barrier wall.**							1	1	1	1	0	4	
M-17	**Expand use of pavement marking messages.**							3	3	3	4	0	13	
M-18	**Refurbishment of PPRPM's./High contrast tape.**							5	5	5	5	0	**20**	
M-AC	Permanent Plowable Raised Pavement Markers (PPRPMs) on all 65 mph highways (1999 Construction).													
M-AC	Dotted Edge Line extensions through all interchange off ramps (1999 construction).													

Note: **BOLD items were determined by Core Group to meet all required selection criteria.**

SHADED items failed one or more required selection criteria.

OTHER items require more clarification.

AC Denotes active projects either currently in development or those for which construction has been completed.

Project Selection Matrix

Category E - Electrical (Lighting/Signals)

Selection Criteria — Required

1. Not experimental
2. Conforms to WisDOT Policies
3. System wide approach
4. Addresses customer or other identified need
5. Long-term O&M issues can be addressed
6. Meets FHWA eligibility requirements

Required- Must be Answered "Yes"

Selection Criteria — Desired

1. Appropriate for SHOP funding
2. Preserves/enhances highway safety
3. Consistent w/WisDOT Safety Strategic Plan
4. High public visibility and impact
5. Builds on successful projects in other states

Rank each from 1 (low) to 5 (high)

Project	Description	1	2	3	4	5	6	1	2	3	4	5	Total Desired	RANK
E-1	**Lighting at free-flow interchanges.**							3	3	4	4		14	
E-2	**Railroad Crossings: Street lighting at crossings to light train. Activated by crossing signals.**												0	
E-3	**Expressway: Flashers for stop signs for at-grade crossings.**							3	4	5	4		16	
E-4	**Advance flashers to notify driver of signal change for high speed applications.**							3	3	5	4		15	
E-5	**Lighting on long bridges.**							1	3	1	4		9	
E-6	**Interchange lighting.**							1	4	3	4		12	
E-7	**Systematic upgrades of signals and controllers and loops.**							1	3	4	1		9	
E-8	**Lighting at intersection decision points.**							5	4	5	5		19	
E-9	**Traffic signal system coordination/interconnection.**							4	4	3	4		15	
E-10	**Traffic signal timing.**							3	4	5	3		15	
E-11	**Traffic signal installation refurbish and controllers.**							1	1	1	1		4	
E-12	**Systematic replacement of light poles.**							1	1	1	1		4	
E-13	**Systematic replacement of Safety Weight Enforcement Facilities (SWEF) signs.**							1	1	1	1		4	
E-AC	Highway lighting at Department traffic signal locations (currently in design/PS&E).													
E-AC	Highway lighting at intersections on 65 mph expressways (currently in design/PS&E).													

Note: **BOLD items were determined by Core Group to meet all required selection criteria.**

SHADED items failed one or more required selection criteria.

OTHER items require more clarification.

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Project Selection Matrix

Category P - Pavement Enhancements

Selection Criteria — Required

1. Not experimental
2. Conforms to WisDOT Policies
3. System wide approach
4. Addresses customer or other identified need
5. Long-term O&M issues can be addressed
6. Meets FHWA eligibility requirements

Required- Must be Answered "Yes"

Selection Criteria — Desired

1. Appropriate for SHOP funding
2. Preserves/enhances highway safety
3. Consistent w/WisDOT Safety Strategic Plan
4. High public visibility and impact
5. Builds on successful projects in other states

Rank each from 1 (low) to 5 (high)

Project	Description	1	2	3	4	5	6	1	2	3	4	5	Total Desired	RANK
P-1	**Expressway: Longer acceleration/deceleration lanes for at-grade crossings.**							3	4	5	5	0	17	
P-2	Construction of passing lanes on two-lane roads.												0	
P-3	**By-pass lanes on town roads intersecting state highways.**							2	4	5	3	0	14	
P-4	**Improve skid resistance.**							3	4	5	3	0	15	
P-5	**Shoulder/center rumble strips on two-lane highways.**							1	4	5	4	0	14	
P-AC	Shoulder rumble strips on freeways (1999 construction).													
P-AC	Shoulder rumble strips on expressways (1999 construction).													

Note: **BOLD items were determined by Core Group to meet all required selection criteria.**

SHADED items failed one or more required selection criteria.

OTHER items require more clarification.

AC Denotes active projects either currently in development or those for which construction has been completed.

Project Selection Matrix

Category O - Other

Selection Criteria — Required

1. Not experimental
2. Conforms to WisDOT Policies
3. System wide approach
4. Addresses customer or other identified need
5. Long-term O&M issues can be addressed
6. Meets FHWA eligibility requirements

Required- Must be Answered "Yes"

Selection Criteria — Desired

1. Appropriate for SHOP funding
2. Preserves/enhances highway safety
3. Consistent w/WisDOT Safety Strategic Plan
4. High public visibility and impact
5. Builds on successful projects in other states

Rank each from 1 (low) to 5 (high)

Project	Description	1	2	3	4	5	6	1	2	3	4	5	Total Desired	RANK
O-1	**Active warning systems for ramps, bridges, RR xings, etc. We have an ITS project ..... to provide over-height detection at several low bridges. This project is in jeopardy because it may not meet ITS guidelines. A potential SHOP effort might be to do a state-wide project to address structures with deficient clearance and old O-9 and O-6.**							1	4	3	5	0	13	
O-2	**Protection of fixed objects in clear zones on high volume roadways.**							4	5	5	3	0	17	
O-3	Anti-icing systems.												0	
O-4	Computerized pavement marking inventory system...like we have for signs (SIMS).												0	
O-5	And probably most important...ongoing funding to maintain previous shop efforts.												0	
O-6	Railroad Crossings: ITS-Train presence at crossings for busses, etc.												0	
O-7	Expressway: Interchanges at high volume crossings.												0	
O-8	**Expressway: Vision triangles for older design crossings.**							1	3	5	3	0	12	
O-9	Expressway: ITS application for vehicle detection for at-grade crossings.												0	
O-10	**On-ramp gates for incident management.**							2	2	1	3	0	8	
O-11	**Narrow median cross over accident prevention – barriers.**							5	3.5	5	5	0	**18.5**	
O-12	**Eliminating/fixing hazards when people leave roadway – clear zones.**							3	4	5	3.5	0	15.5	
O-13	**Upgrading guardrail end treatments/turn downs.**							3	3	5	3	0	14	
O-14	**2000 MUTCD issues.(defer pending Standing Comm Reviews)**							1	1	1	1	0	4	
O-15	**Statewide IM enhancements.**							2	1	2	2	0	7	
O-16	**Salt storage facilities.**							2	3	3	3	0	11	
O-17	Inventory system.												0	
O-18	**Guardrail at additional locations.**							4	3	5	3	0	15	
O-19	Rest area improvements.												0	
O-20	Older driver improvements: enhancements of various kinds.												0	
O-21	**Establish living snow fence.**							1	3	3	3	0	10	
O-22	**Deer-vehicle crash reduction efforts.**							1	1	1	1	0	4	

Note: **BOLD items were determined by Core Group to meet all required selection criteria.**

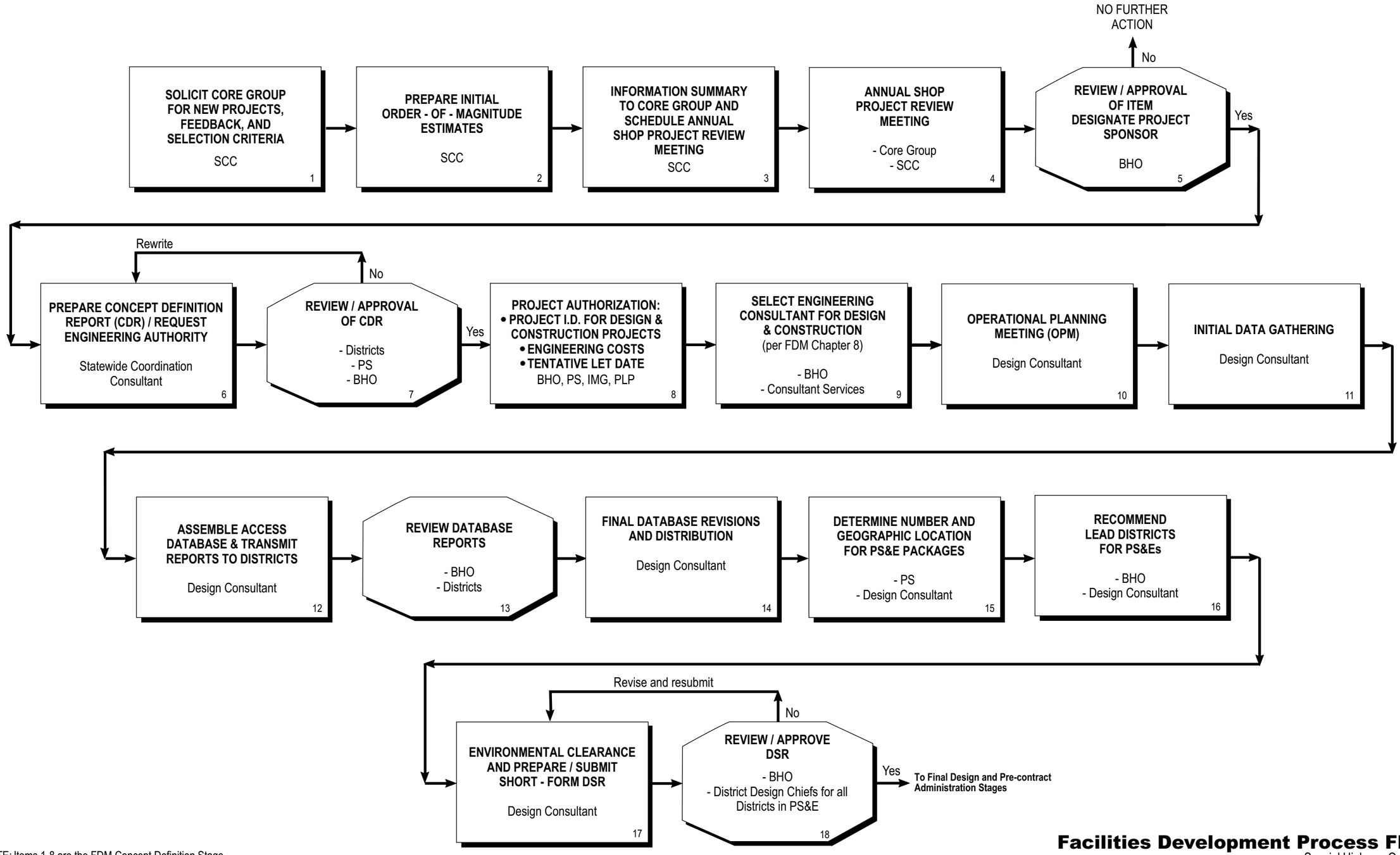
SHADED items failed one or more required selection criteria.

OTHER items require more clarification.

AC Denotes active projects either currently in development or those for which construction has been completed.

Figures

CONCEPT DEFINITION, INVESTIGATION, AND DETERMINATION STAGES



NOTE: Items 1-8 are the FDM Concept Definition Stage.
Items 9-18 are the FDM Investigation and Determination Stages (Program Development Process).

FIGURE 1
Facilities Development Process Flowchart
Special Highway Operations Program

FINAL DESIGN AND PRE-CONTRACT ADMINISTRATION STAGES

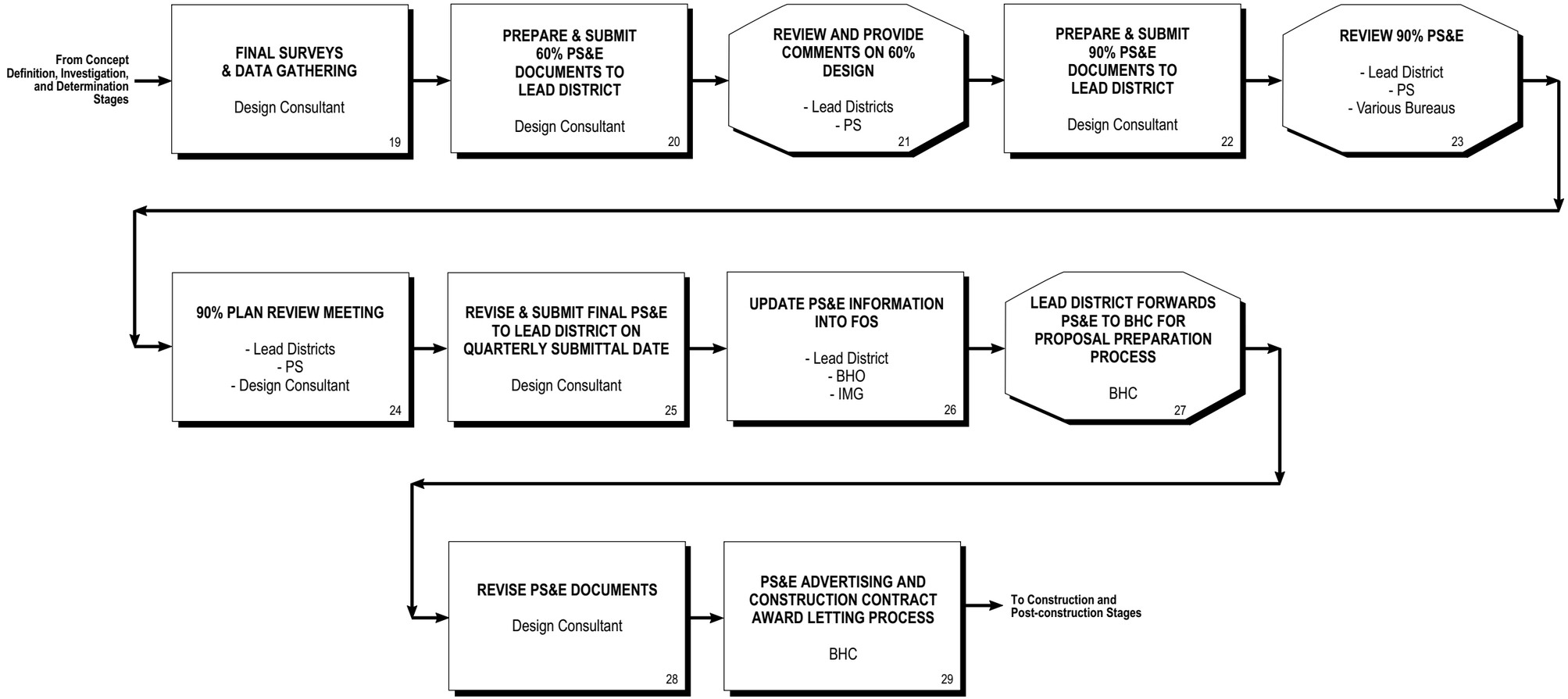


FIGURE 1

Facilities Development Process Flowchart

Special Highway Operations Program

CONSTRUCTION AND POST-CONSTRUCTION STAGES

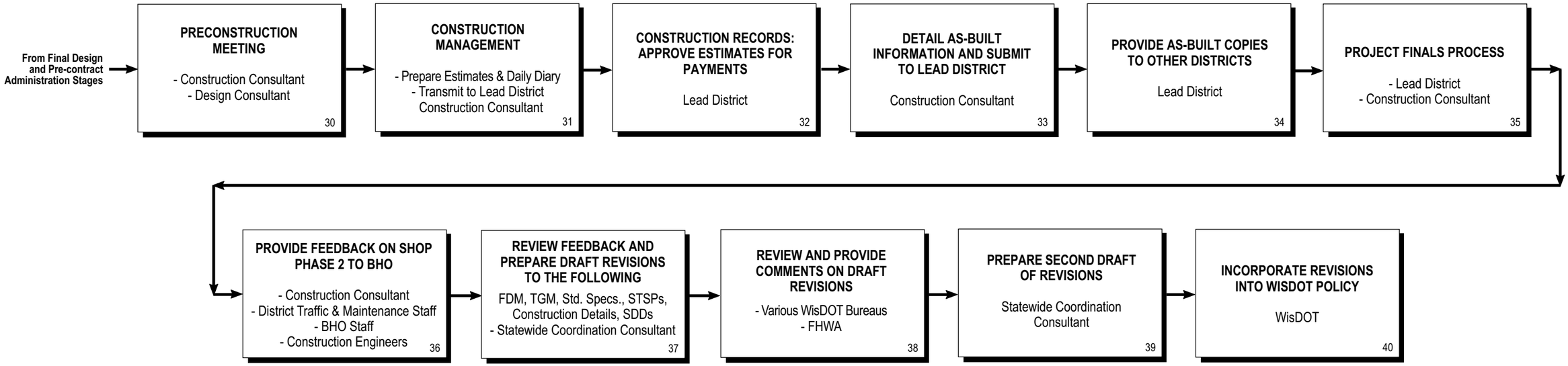
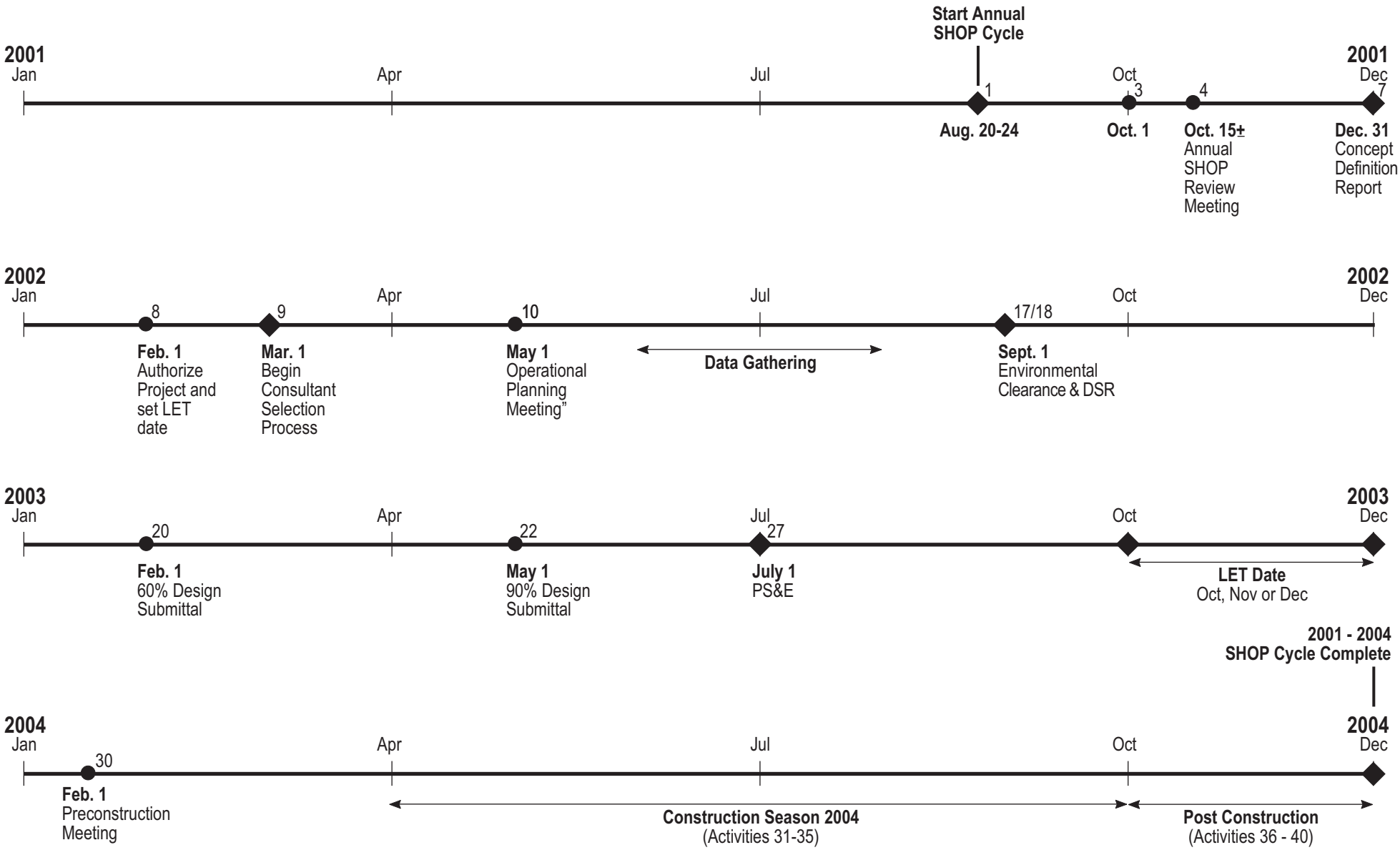


FIGURE 1
Facilities Development Process Flowchart
Special Highway Operations Program

CH2MHILL



NOTES: 1. (30) = Activity as described in text & on Figure 1.

2. ◆ = Major milestone events critical to annual SHOP cycle.

3. For clarity of presentation, not all activities are shown.

4. Schedule shown is for project cycle 2001-2004. Following years similar.

FIGURE 2

Typical Project Implementation Schedule

Special Highway Operations Program

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Appendix A

Special Highway Operations Program Partnering Agreement

Special Highway Operations Program Partnering Agreement

The Special Highway Operations Program (SHOP) Partnering Agreement seeks to build statewide support for SHOP and its Strategic Plan.

By signing below the Core Group members support the following:

- SHOP as one method to accomplish critical state- and corridor-wide highway safety and operational improvements throughout the State of Wisconsin
- The SHOP shared vision and mission – and the Strategic Plan as the guidance vehicle to achieve that vision and mission
- The principle of establishing annual SHOP project priorities
- Respect for differences in district administration needs, central administration needs, and resources in implementing SHOP and its project priorities
- A willingness to share constructive suggestions for building and strengthening SHOP to best serve the needs of the districts, WisDOT central administration, and the traveling public
- To positively represent SHOP's vision, mission, Strategic Plan, direction, and priorities in district and central administration discussions and planning for resource allocation
- A willingness to take ownership for SHOP projects within central administration and each transportation district
- A willingness to support a consensus agreement on SHOP priorities by the Core Group, which may involve "standing aside" to prevent blocking consensus and enabling consensus to happen
- A willingness to revisit, on a periodic basis, the goals of SHOP, and to adjust both financial and staffing resources that are committed to the program, based upon whether SHOP goals have been accomplished